



2011 Water Quality Monitoring

The 2011 water quality monitoring results listed in the following table show that there were no contaminants at or above the allowable levels. The sources of all drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals, which can be vulnerable to contamination. In both of Edmonds water supplies, these potential contaminants and their sources include:

- Microbial contaminants, such as viruses and bacteria, from wildlife;
- Inorganic contaminants, such as salts and metals, which are naturally occurring, and;
- Organic contaminants, which are by-products of the water chlorinating processes.

Managing the Distribution System

A key to maintaining good water quality is effectively managing the water distribution system. It is important for water to remain fresh and retain sufficient chlorine for disinfection. The City has a flushing program and also has a cross-connection control program designed to keep contaminants from homes and businesses from entering the potable water system.



Edmonds Water Source: Where our drinking water comes from

Along with most residents within the City of Edmonds, you receive your water from Everett's Spada Reservoir in the Sultan Basin. Our water source is disinfected with chlorine, which destroys Giardia, bacteria and viruses that may be present in the source water. Our water source also adds fluoride to prevent tooth decay.

Everett Water Source

The Sultan Basin watershed, which fills Spada Reservoir, is protected and patrolled regularly. This watershed receives more than 160 inches of rain each year. Water from Spada Reservoir is routed by pipe to Chaplain Reservoir. There, this pristine high quality mountain water is treated at the City of Everett's filtration plant before being distributed for consumption. From the source, the greatest care is taken to ensure that the water you use meets federal and state requirements as well as Everett's own high local standards.

Along the way for distribution, the water is tested frequently for microbiological and chemical quality to ensure you receive safe water each time you use your faucet. The City of Everett provides this water for their own customers and numerous other water utilities. The City of Edmonds purchases Everett's water through Alderwood Water District, Alderwood Water District also supplies several other water utilities within Snohomish county.

Edmonds Distribution system:

Within the City of Edmonds distribution system, there are three 1.5 million gallon and one 3.0 million gallon reservoirs.



2012

Annual Water Quality Report

This report contains information about your drinking water, required by the Environmental Protection Agency (EPA)



*The bottom line is this:
Our water is safe to drink.
Our water quality meets
or exceeds state and
federal standards.*



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POSTAL CUSTOMER

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2011 WATER QUALITY DATA

Parameter	Units	EPA's Allowable Limits		Alderwood Water		Typical Sources	Comply
		MCLG	MCL OTHER	RANGE OR OTHER	AVERAGE VALUE OR HIGHEST RESULT		
Fluoride	ppm	2	4	0.8 - 1.0	0.8	Dental additive	Yes
Nitrate	ppm	10	10	0.035 - 0.124	0.083	Erosion from natural deposits	Yes
% of positive samples for Total Coliform Bacteria	%	0	5% per month	0 - 1.6%	1.6%	Naturally present in the environment	Yes
Microbial Parameters (Measured in Edmonds Distribution System)							
% of positive samples for Total Coliform Bacteria	%	0	5% per month	0 - .0434%	0.0434%	Naturally present in the environment	Yes
Turbidity, inorganics, and Microbial Contaminants							
Turbidity	NTU	N/A	TT	100%	0.14	Soil Erosion	Yes

Turbidity is a measure of the amount of particulates in water measured in Nephelometric Turbidity Units (NTU). Particulates in water can include bacteria, viruses and protozoans that can cause disease. Turbidity measurements are used to determine the effectiveness of the treatment processes used to remove these particulates. Values reported are the lowest monthly percentage of samples that met the turbidity limit (0.3 NTU for EPA and 0.1 NTU for the state) and the highest filtered water turbidity measurement obtained in 2008.

MCL = Maximum Contaminant Level: The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.

MCLG = Maximum Contaminant Level Goal: The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.

NTU = Nephelometric Turbidity Unit: The unit of measurement for turbidity.

TT = Treatment Technique: A required process intended to reduce the level of a contaminant in drinking water. The turbidity MCL that applies to the Tolt water supply is 5 NTU.

Detected Unregulated Contaminants

Parameter	Units	Ideal Level/Goal	Edmonds Water		Typical Sources
		(MCLG)	Range	Average	
Bromodichloromethane ^{1,2}	ppb	0	1.1 - 2.4	1.7	Disinfection by product from chlorine
Chloroform (trichloromethane) ^{1,2}	ppb	300	24.4 - 50.6	39.2	
Total Trihalamethanes (TTHM) ²	ppb	See Note 3	25.5 - 48.5	41	
Dichloroacetic Acid ^{1,2}	ppb	0	3.0 - 17.3	11.5	
Trichloroacetic Acid ^{1,2}	ppb	300	16.1 - 26.0	22	
Haloacetic Acids (HAA5) ²	ppb	See Note 4	21.6 - 46.9	35.2	

¹These substances are disinfection by-products which must be monitored to determine compliance with the USEPA Stage 1 and Stage 2 Disinfectants/Disinfection By-products Rules (Stage 2 D/DBPR).

² Includes results for 16 study sites and four additional sites that are monitored for compliance with current regulations. The study sites were monitored during October and December 2007 as part of a required study to identify new distribution system monitoring sites. This study known as the initial distribution system evaluation, or IDSE, and will continue through August 2008. The IDSE is required by the Stage 2 D/DBPR regulations.

³The MCL for TTHM is 80 ppb.

⁴The MCL for HAA5 is 60 ppb.

AL = Action Level: The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow (for lead and copper monitoring results).

NA - Not Applicable (EPA has not established these goals).

ND - Not Detected.

NR - Not Regulated (these substances are not regulated by EPA).

ppm = Parts per Million: (One part of a particular contaminant is present for every million parts of water).

ppb = Parts per Billion: (One part of a particular contaminant is present for every billion parts of water).

Conversions:

1 part per million (ppm) = 1 mg/L

1 part per billion (ppb) = 1 ug/L

1 ppm = 1000 ppb

1 mg/L = 1000 ug/L



Voluntary Information

Parameter	Units	Everett Water Results	
		Range Detected	Average Value
Alkalinity ¹	ppm	13.3 - 27.2	17.7
Aluminum ¹	ppm	0.009 - 0.086	0.019
Arsenic ²	ppb	ND ³	ND ³
Calcium Hardness ¹	ppm ⁴	7.2 - 12.8	9.2
pH ¹	s.u.	7.6 - 9.2	8.2
Sodium ²	ppm	5.4 - 7.5	6.7
Total Hardness ¹	ppm ⁴	9.8 - 14.2	11.6
¹ Results are from samples collected from 26 locations in Everett's distribution system ² Arsenic and Sodium were monitored at the treatment plant effluent. ³ ND = Not Detected ⁴ Hardness and alkalinity units are in ppm as CaCO ₃ (calcium carbonate equivalent units).			

Possible Water Quality Concerns

Cryptosporidium

Cryptosporidium parvum is a protozoan pathogen (disease-causing organism) commonly found in the natural environment. Most rivers and streams across the country have detectable concentrations of this pathogen. From both surface water sources, *Cryptosporidium* sources include deer, elk, and moles in the watersheds. Chlorination is ineffective against *Cryptosporidium*; however, there have been no disease outbreaks associated with either of our drinking water sources.

Seattle monitored for *Cryptosporidium* in the source water (prior to treatment) monthly for 18 months in 1997 and 1998, in accordance with the Federal Information Collection Rule. *Cryptosporidium* was not detected in any of the 18 untreated water samples on the Tolt system. In 2004, *Cryptosporidium* samples were not collected from Seattle's Tolt supply due to removal and inactivation of *Cryptosporidium* by the new Tolt Filtration Plant. The City of Everett routinely monitors for *Cryptosporidium* in the source water and in their treated water before it enters the distribution system. In 2005, one of the 12 monthly samples of the raw, source water showed the presence of *Cryptosporidium*. However, no *Cryptosporidium* was detected in the finished/ treated water you receive. The City of Everett reduces the risks from this organism by optimized filtration processes at its water filtration plant.

Furthermore, the method used for detecting *Cryptosporidium* cannot determine if the organisms which are detected are alive and possibly harmful, or dead and presumably harmless.

By protecting our watersheds, the likelihood of the occurrence of *Cryptosporidium* and other potentially harmful organisms in these two source waters are greatly reduced. Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. Environmental Protection Agency (EPA) / Center for Disease Control (CDC) guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available from the Safe Drinking Water Hotline by calling 1-800-426-4791.

Radon

Although we are not required to test for radon, Seattle and Everett have tested their sources to determine its occurrence. Monitoring shows that radon was not present in either Spada or the Tolt water supplies. The EPA is currently developing a new rule related to radon. Seattle and Everett expect to be able to meet the new radon regulations with no additional treatment.

Information from EPA

To ensure that tap water is safe to drink, EPA adopts regulations setting the water quality standards for the public water systems. The Federal Food and Drug Administration regulates contaminants in bottled water and is responsible for providing the same level of public health protection. Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline (1-800-426-4791).

Lead and Copper

As part of regional monitoring conducted in the 1990's, drinking water in "potentially high risk" homes was tested for lead and copper under "worst case" conditions.

POTENTIALLY HIGH RISK: homes or buildings that were built or replumbed with copper pipes and lead-based solder between 1978 and 1980. Lead solder was banned in the Seattle area in 1980. Homes with copper plumbing installed before 1978 may still have some risk, but the risk decreases as the plumbing ages. If you do not have copper plumbing, your risk is low.

WORST CASE: when water has not been used, and has been sitting stagnant in the pipes for six hours or longer (such as first thing in the morning, or in the evening). If your home or building is "potentially high risk," you may want to flush water that has been standing for six hours or longer, prior to using it for cooking or drinking. Many people flush until they notice the temperature change, usually less than 30 seconds. Be "water smart" though, use the flushed water for watering plants, etc. If your home does not meet EPA's "high risk" criteria, you may still be at some risk from lead leaching from brass faucets. You only need to run 6-8 ounces of water to flush what is inside the faucet.

There are health impacts from lead in the water. Infants and children who drink water containing lead in excess of the action level could experience delays in their physical or mental development. Children could show slight deficits in attention span and learning abilities.

Adults who drink this water over many years could develop kidney problems or high blood pressure. If you have children in your home, it is especially important for you to know what kind of plumbing your home has and when it was installed. A plumber should be able to help determine your plumbing materials. You could have your water tested at your own expense.

The following table shows the lead and copper regional monitoring for Everett, which includes homes served by Edmonds.

Everett Regional Monitoring						
Parameter	Units	MCLG	Action Level	90th percentile	# Homes Exceeding Action Level	Source
Lead	ppb	0	15	.3	3 out of 134 (2.2%)	Corrosion of household plumbing systems
Copper	ppm	1.3	1.3	0.188	None	